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The spinal control of ejaculation revisited; a systematic review and meta-analysis of anejaculation in spinal cord injured patients

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Introduction. – Most spinal cord injured (SCI) men cannot ejaculate without medical assistance. In light of the discovery of a spinal generator of ejaculation (SGE) in rat, studies about ejaculation after SCI have been reviewed in order to revisit the role of the spinal cord in the control of ejaculation assess the existence of a SGE in man.

Methods. – Studies were identified from Embase, PubMed, EBSCOhost and Cochrane Library. Studies were eligible when they specify the occurrence of antegrade ejaculation as a function of the neurological characterisation of SCI. Meta-analyses were performed to assess reference ejaculation rates for each procedure used to elicit ejaculation i.e. masturbation or coitus, penile vibratory stimulation (PVS) or acetylcholine esterase inhibitors prior to masturbation (AchEM). Subgroup analyses were performed according to i) the completeness and ii) the upper and lower limits of the SCI. To assess the existence of a SGE, the effect of concurrent lesions of different spinal segments was assessed by means of a stratified bivariate analysis.

Results. – Forty-five studies were selected (including 3851 patients). Ejaculation occurred in response to masturbation or coitus, PVS or AchEM in respectively 274/2509, 980/1911 and 194/341 SCI patients. Ejaculation in case of complete lesion of the sympathetic centres (T12 to L2), parasympathetic and somatic centres (S2 to S4) or all spinal ejaculation centres (T12 to S5) occurred, in response to PVS or AchEM in 365/841 and 0876 patient. Ejaculation was rhythmic forceful in 47/48 patients with complete lesion strictly above Onuf’s nucleus (segments S2 to S4) and complete injury of the S2 to S4 segments precluded the occurrence of rhythmic forceful ejaculation. Controlling for the number of the injured segments between T12 and L2 (sympathetic centres), ejaculation rate sharply decreased when the lesion extended to the segment L3 or below.

Discussion. – The results reinforce the crucial role of the spinal sympathetic and parasympathetic centres for emission and the somatic centre for expulsion. This analysis suggests the existence of a spinal generator of ejaculation in man located in L3, L4 and L5 segments.

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Erection and ejaculation in the conus medullaris injuries: Clinic’s focus and therapeutic

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Keywords: Conus medullaris; Cauda equina; Erection; Ejaculation; Spinal cord injury

Introduction. – The spinal cord injury always cause erectile and ejaculation dysfunctions. This troubles depend on the lesion’s level and surface. Our aims are to evaluate the erectile dysfunction and ejaculatory dysfunction on patients with a lesion of the conus medullaris and evaluate the efficacy of treatment.

Patients and methods. – Ninety patients with injured conus medullaris underwent a retrospective and monocentric study. They have all an assessment of erectile dysfunction and ejaculatory by the IIEF and a scenario.

 Seventy-seven had therapeutic tests to restore erection. Seventy-four underwent stimulation tests to cause ejaculation (vibrromassage = VM) with a systematic recherche of retrograde ejaculation by search of spermatozoa (SPZ) in urine.

Results. – Ninety patients with a complete lesion of the sacral metameseres (S2S3S4),77 have an erection not exceeding 2/5 and not allowing intercourse. Thirteen reported a good erection but limited duration. Clinical trials by PGE, IPDE-V and papaverine are effective on erection. 40/49 for PGE (81.63%), 12/59 for IPGE-V (30.76%), 9/13 for IPGE + PGE and PGE-V + papaverine (69.23%).

Eighty-four have an anejaculation to masturbation and to intercourse (93.33%). The VM alone has allowed an ejaculation in 16.21% of cases. Twelve ejaculations/74 patients (six anterograde, four retrograde and two mixed). Ejaculation is observed in 20/38 patients (52.63%) who benefited from VM associated with midodrine (one anterograde, 15 retrograde and six mixed).

Discussion and conclusion. – Compared with data from the literature, our study describe on a broader sample, the erectile and ejaculatory dysfunction specific of injuries of sacral spinal cord which are difficult to treat. It also focuses on the efficacy of treatment on the market. Regular evaluation of the efficacy contributes to a better management of these disorders and a better understanding of their mechanism.

Further reading
